

Diagnosis of sarcoidosis by lip biopsy of minor salivary glands

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Summary: In two patients with bilateral parotid gland swelling of unknown etiology the diagnosis of sarcoidosis was established by lip biopsy of the minor salivary glands. This simple, innocuous biopsy procedure may prove useful in tissue documentation of sarcoidosis.

Résumé: Chez deux malades présentant une hypertrophie bilatérale des glandes parotides une biopsie des petites glandes salivaires labiales a permis d'établir un diagnostic de sarcoidose. Cette biopsie simple et inoffensive peut s'avérer utile pour obtenir une documentation tissulaire de sarcoidose.

Pathologic tissue is required for the diagnosis of sarcoidosis. Frequently a biopsy of lymph node, bone marrow, liver or lung must be performed, with certain attendant risk and expense to the patient. We recently observed two patients with parotid gland enlargement of unknown etiology. In both instances lower lip biopsies demonstrated the presence of noncaseating granulomas in minor salivary glands, establishing the diagnosis of sarcoidosis. The subsequent clinical course of both patients was consistent with this diagnosis.

Case reports

Patient 1

A 42-year-old black man presented with polyarthritis of three weeks' duration. Marked bilateral swelling of the wrists and proximal interphalangeal and ankle joints was demonstrable. He could not form a closed fist on the right side owing to tenosynovitis of the flexor tendons. Synovial fluid aspiration from the ankle yielded 3 ml of clear yellow fluid with a leukocyte count of 700 — 66% polymorphs and 34% lymphocytes. No crystals were demonstrable on polarizing microscopy. The patient had had tuberculous adenitis at age 7 years. Four months before the present admission an ophthalmologist had noted acute iridocyclitis in the right eye, which subsequently responded to topical steroids and mydriatics. Results of labora-

tory investigations, including hematocrit and the serum values of calcium, phosphorus and uric acid were normal. Abnormal immunoreactants, including antinuclear factor and rheumatoid factor, were not detected. Total serum protein level was 8.7 g/dl, albumin 4.2 g/dl and globulin 4.5 g/dl. Serum alkaline phosphatase value was 190 units/dl (normal 30 to 85); LDH, 210 units/ml (normal 80 to 200); and SGOT, 50 units/ml (normal 10 to 50). Skin tests were positive with candidin (1:100) and second-strength tuberculin protein, but were negative for mumps and streptokinase/streptodornase antigens (50 units).

Two weeks after admission a flexor tenosynovectomy and carpal tunnel release were performed on the right hand. Noncaseating granulomas and chronic active synovitis were found in the excised synovium. No acid-fast bacilli or fungi were demonstrable. Chest radiography and pulmonary function tests yielded normal findings. The arthritis responded to hydroxychloroquin (Plaquenil®) and salicylates.

Five months later the parotid and submandibular glands became enlarged and firm bilaterally. A lip biopsy of the minor salivary glands was performed and again noncaseating granulomas were found.

Comments: Rheumatoid arthritis was the initial diagnosis considered in this patient. The presence of noncaseating granulomas in the synovial tissue suggested the diagnosis of sarcoidosis. A lip biopsy five months later confirmed salivary gland involvement with sarcoidosis.

Patient 2

A 28-year-old black man was hospitalized for evaluation of dryness of the eyes

of five weeks' duration and bilateral painful parotid gland swelling of one week's duration. The parotid and lacrimal glands of both sides were moderately enlarged, indurated and tender. Keratoconjunctivitis sicca was diagnosed by a positive Schirmer's test and slit lamp examination. The hematocrit, serum calcium and phosphorus values and liver-function test results were normal. Serum amylase value was 690 Somogyi units/dl (normal, 45-200). Lip biopsy disclosed noncaseating granulomas involving the minor salivary glands (Fig. 1). In retrospect, at that time he had hilar adenopathy, which has subsequently diminished.

One year later pulmonary function tests revealed diminished lung volumes, impaired steady state diffusion capacity (54% of predicted) and normal flow rates.

Comments: This patient presented with keratoconjunctivitis sicca and tender indurated parotid swelling. The serum amylase level was elevated. Mumps, bacterial parotitis, Sjögren's syndrome and sarcoidosis were considered in the differential diagnosis. Lip biopsy revealed noncaseating granuloma, and subsequent chest radiographs and results of pulmonary function studies were consistent with the diagnosis of sarcoidosis.

Lip biopsy method

Biopsies of the lip were performed by an oral surgeon (E.H.R.) as an outpatient procedure. The mucosa of the lower lip was anesthetized using 2% lidocaine with 1/100,000 epinephrine. Two parallel incisions about 1 cm long, 2 to 3 mm apart and 2 to 3 mm deep were made with a #15 blade. The underlying salivary tissue

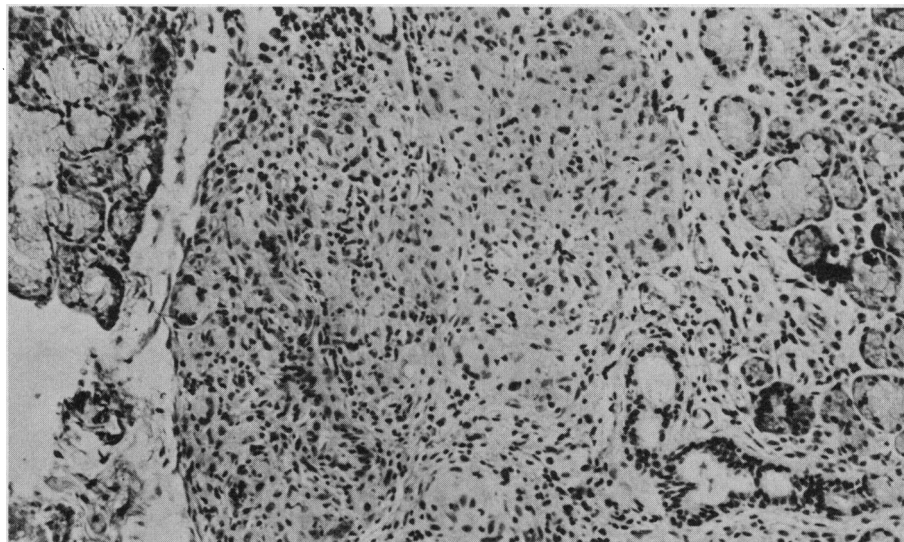


FIG. 1—Lip biopsy from patient 2 showing noncaseating granuloma surrounded by salivary gland acini and ducts. Numerous multinucleated giant cells are visible within the granuloma. Hematoxylin-eosin x150.

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was grasped with forceps and excised using scissors. Bleeding was negligible and the wound was closed with dissolvable sutures.

Discussion

Minor salivary glands, easily biopsied from the lip or anywhere in the oral mucosa, may be involved by sarcoidosis, with the typical histologic changes, even though the mucosa looks grossly normal. Biopsy of normal-appearing palates in a group of 23 patients with known sarcoidosis revealed noncaseating granulomas in the underlying minor salivary glands in 38% of cases.¹

Lip biopsy is a relatively new technique but has already been used extensively in the study of patients with Sjögren's syndrome. Over 120 lip biopsies have been performed without adverse effects.^{2,3} The morbidity associated with the biopsy technique is very low. Most patients experience some local transient discomfort and contusion, comparable with that of a dental extraction. The biopsy can easily be done as an outpatient or bedside procedure.

Other reports have recently appeared, mostly in the dental literature, in which the diagnosis of sarcoidosis was established by lip biopsy. A patient with bilateral parotid swelling, xerostomia, keratoconjunctivitis sicca and skin rash was demonstrated to have sarcoidosis by both skin and lip biopsy.⁴ Another patient, who presented with arthritis, parotid enlargement and hilar adenopathy, had the histologic diagnosis of sarcoidosis established by this technique.⁵ Other investigators have unexpectedly encountered sarcoidosis in a labial biopsy performed in the course of evaluating a patient with suspected Sjögren's syndrome.⁶ In six additional patients with suspected sarcoidosis two of six biopsies were positive.⁶

The lip biopsy performed in both our patients yielded positive results and helped establish the diagnosis. This simple, innocuous technique should be considered in patients with salivary gland enlargement suspected of having sarcoidosis. Further study may indicate the lip as a useful biopsy site in suspected cases of sarcoidosis even in patients without overt salivary gland involvement.

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POSTGRADUATE COURSES

RATIONAL USE OF ANTIBIOTICS. Community Centre, Tillsonburg, Ont. Jan. 8, 1975. Information: Ontario Medical Foundation, 242 St. George St., Toronto, Ont. M5R 2P4

LES DOULEURS RHUMATISMALES D'ORIGINE EXTRA-ARTICULAIRE. Auditorium Rousselot, Hôpital Notre-Dame, Montréal. Le 11 janvier 1975. Renseignements: Directeur du Service d'éducation médicale continue, Université de Montréal, C.P. 6207, Succursale A, Montréal, Qué. H3C 3T7

CANCER. Half-day intensive seminar for general practitioners and physicians. Princess Margaret Hospital, Toronto. Jan. 15, 1975. Sponsored by the Ontario Cancer Treatment and Research Foundation. Information: Dr. P. J. Fitzpatrick, 500 Sherbourne St., Toronto, Ont. M4X 1K9

CANCER SYMPOSIUM: CONTROL OF PAIN IN CANCER. Victoria Hospital, London. Jan. 15, 1975. Information: Assistant Dean, Continuing Education, Faculty of Medicine, University of Western Ontario, London, Ont. N6A 3K7

JOURNÉE DE NUTRITION: L'OBÉSITÉ. Auditorium, Hôtel-Dieu de Montréal. Le 18 janvier 1975. Renseignements: Directeur du Service d'éducation médicale continue, Université de Montréal, C.P. 6207, Succursale A, Montréal, Qué. H3C 3T7

EMERGENCY SITUATIONS. Caswell Hotel, Sudbury, Ont. Jan. 22, 1975. Information: Ontario Medical Foundation, 242 St. George St., Toronto, Ont. M5R 2P4

ALCOHOL AS A DRUG. Addiction Research Foundation, Toronto. Jan. 29, 1975. Information: Ontario Medical Foundation, 242 St. George St., Toronto, Ont. M5R 2P4

ANNUAL REFRESHER COURSE FOR GENERAL SURGEONS. Toronto General Hospital. Feb. 3-5, 1975. Information: The Director, Division of Postgraduate Medical Education, University of Toronto, Toronto, Ont. M5S 1A8

ANESTHESIA REFRESHER COURSE. St. Joseph's, Victoria and University Hospitals, London. Feb. 3-7, 1975. For general practitioner-anesthetists. Information: Assistant Dean, Continuing Education, Faculty of Medicine, University of Western Ontario, London, Ont. N6A 3K7

PSYCHIATRY IN MEDICINE (PSYCHOSOMATICS). University Hospital, London. Feb. 5, 1975. Information: Assistant Dean, Continuing Education, Faculty of Medicine, University of Western Ontario, London, Ont. N6A 3K7

FAMILY THERAPY MINI WORKSHOP. London Psychiatric Hospital, London, Ont. Feb. 6, 1975. Information: Assistant Dean, Continuing Education, Faculty of Medicine, The University of Western Ontario, London, Ont. N6A 3K7

MULTIDISCIPLINARY TRAINING PROGRAM IN SEXUALITY AND FERTILITY. Extension course. McMaster University, Hamilton, Ont. Feb. 7 - June 11, 1975. Information: Maureen Orton, Project Director, McMaster University, School of Adult Education, Hamilton, Ont., telephone: (416) 525-9140, ext. 4325.

GYNÉCOLOGIE-OBSTÉTRIQUE EN PRATIQUE GÉNÉRALE. Hôpital Notre-Dame, Montréal. Les 7-8 février 1975. Renseignements: Directeur du Service d'éducation médicale continue, Université de Montréal, C.P. 6207, Succursale A, Montréal, Qué. H3C 3T7

FAMILY PRACTICE DAY. Crown Rm., Prince Hotel, Don Mills, Ont. Feb. 12, 1975. Information: Ontario Medical Foundation, 242 St. George St., Toronto, Ont. M5R 2P4

REFRESHER COURSE FOR PRACTISING PATHOLOGISTS. University of Toronto. Feb. 12-15, 1975. Information: The Director, Division of Postgraduate Medical Education, University of Toronto, Toronto, Ont. M5S 1A8

HEARING MEASUREMENT AND CONSERVATION WORKSHOP. University of Toronto. Feb. 17-20, 1975. Information: School of Continuing Studies, University of Toronto, 119 St. George St., Toronto, Ont. M5S 1A9

OPHTHALMOLOGY FOR FAMILY PHYSICIANS. University of Toronto. Feb. 20-21, 1975. Information: The Director, Division of Postgraduate Medical Education, University of Toronto, Toronto, Ont. M5S 1A8

PEDIATRICS, OBSTETRICS AND GYNECOLOGY. Health Sciences Bldg., University of Saskatchewan, Saskatoon. Feb. 20-22, 1975. Information: Mrs. M. P. Sarich, Continuing Medical Education, 408 Ellis Hall, University of Saskatchewan, Saskatoon, Sask. S7N 0W8

MÉDECINE NUCLÉAIRE EN PRATIQUE GÉNÉRALE. Hôpital Notre-Dame, Montréal. Le 22 février 1975. Renseignements: Directeur du Service d'éducation médicale continue, Université de Montréal, C.P. 6207, Succursale A, Montréal, Qué. H3C 3T7

RECENT ADVANCES IN THE MANAGEMENT OF ALCOHOLISM AND DRUG ADDICTION. University of Toronto. March 1, 1975. Information: The Director, Division of Postgraduate Medical Education, University of Toronto, Toronto, Ont. M5S 1A8

CORRESPONDENCE COURSE IN GENERAL SURGERY. Fifteen prepared weekly reading lists and weekly multiple-choice questionnaires to answer and submit for grading. March 1-June 13, 1975. Registration closes March 15, 1975. Information: The Secretary, Postgraduate Board, The Montreal General Hospital, 1650 Cedar Ave., Montreal, Que. H3G 1A4

NEUROLOGY IN A CLINICAL SETTING. University and Victoria Hospitals, London. March 5, 1975. Information: Assistant Dean, Continuing Education, Faculty of Medicine, University of Western Ontario, London, Ont. N6A 3K7

FAMILY THERAPY MINI WORKSHOP. London Psychiatric Hospital, London, Ont. March 6, 1975. Information: Assistant Dean, Continuing Education, Faculty of Medicine, The University of Western Ontario, London, Ont. N6A 3K7

LA PSYCHIATRIE DU PRATICIEN. Hôpital Saint-Luc, Montréal. Le 8 mars 1975. Renseignements: Directeur du Service d'éducation médicale continue, Université de Montréal, C.P. 6207, Succursale A, Montréal, Qué. H3C 3T7

OPHTHALMOLOGY AND ENT. Health Sciences Bldg., University of Saskatchewan, Saskatoon. March 13-15, 1975. Information: Mrs. M. P. Sarich, Continuing Medical Education, 408 Ellis Hall, University of Saskatchewan, Saskatoon, Sask. S7N 0W8

ANESTHESIA FOR FAMILY PHYSICIANS. St. Michael's Hospital Auditorium, Toronto. March 15, 1975. Information: Ontario Medical Foundation, 242 St. George St., Toronto, Ont. M5R 2P4

MONTREAL NEURO-OPHTHALMOLOGY CONFERENCE. Queen Elizabeth Hotel, Montreal. March 17-18, 1975. Information: The Secretary, Postgraduate Board, Royal Victoria Hospital, 687 Pine Ave. W., Montreal, Que. H3A 1A1

SEVENTH ANNUAL POSTGRADUATE COURSE IN DRUG THERAPY. The Montreal General Hospital and McGill University. March 20-21, 1975. Information: Dr. R. I. Ogilvie, Division of Clinical Pharmacology, The Montreal General Hospital, 1650 Cedar Ave., Montreal, Que. H3G 1A4

HYPERTENSION ET CONDITIONS ASSOCIÉES. Institut des Recherches Cliniques, Montréal. Le 22 mars 1975. Renseignements: Directeur du Service d'éducation médicale continue, Université de Montréal, C.P. 6207, Succursale A, Montréal, Qué. H3C 3T7

ANTIBIOTICS IN CHILDREN. Main Lecture Theatre, Women's College Hospital, Toronto. March 26, 1975. Information: Ontario Medical Foundation, 242 St. George St., Toronto, Ont. M5R 2P4

SECOND ANNUAL DAY IN CLINICAL NEUROSCIENCES. McMaster University Medical Centre, Hamilton. April 2, 1975. For family physicians and internists. Information: Dr. Andrew Talalla, Dept. of Surgery, McMaster University Medical Centre, 1200 Main St. W., Hamilton, Ont. L8S 4J9

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